

Site Name	ECSI Site ID No.	EPA Draft FS - Section 1 Text (EPA 2014)		Portland Harbor Upland Source Control Summary Report (DEQ 2014)		Draft FS Appendix Q		LWG Comment Regarding Accuracy of EPA Revised FS Section 1 Text or Member Comment to DEQ Regarding Accuracy of SCSR
		Section Number	FS Section 1 Text Being Commented On	Text summary	Page	Text summary	PDF Page	
Groundwater Sites								
NA	NA	1.2.3.4 (Groundwater)	All groundwater text.	NA	NA	NA	NA	<p>In general, presentation of information on groundwater plumes excludes information on completed and ongoing groundwater controls provided in the SCSR. This gives the impression that all the chemicals listed exist as ongoing groundwater plumes discharging to the river, which at many sites is no longer the case.</p> <p>In addition, the presented information does not describe the source control priorities or categories of potential for sediment recontamination provided in the SCSR. This results in the impression that all groundwater plumes are equally important in terms of potential sediment cleanup, which is clearly not the case.</p>
NA	NA	1.2.3.4	All groundwater text.	NA	NA	NA	NA	<p>Most of the names provided in EPA's FS Section 1 for these sites differ from the names provided in the SCSR. Use of the ECSI numbers helps reduce the confusion, but it is confusing that the site names vary so much between the two documents. Every instance of these variations were not individually noted below.</p>
US Navy Reserve	5109	1.2.3.4	Not listed.	"The US Navy and Marine Reserve Center is located on the east side of Swan Island Lagoon at river mile 8.2. Petroleum underground storage tanks were removed beneath dock area in 1993. Riverbank impacted soil and groundwater impacts remained after completion of the tank removal. DEQ requested the US Navy investigate stormwater as a potential source control pathway, in addition to the riverbank and groundwater issues associated with the former leaking underground storage tanks. The US Navy was unwilling to conduct the additional requested site evaluations. DEQ referred the site to the U.S. Environmental Protection Agency in 2011 for follow up. Until investigations are complete and any warranted controls are in place and demonstrated to be effective, DEQ recommends that EPA consider these pathways from the site to be uncontrolled and with a medium potential for sediment recontamination."	31-32	Groundwater pathway is not listed.	59	<p>The SCSR-lists US Navy Reserve (ECSI #5109) as uncontrolled for groundwater with medium potential for sediment recontamination. This site should be included in FS Section 1. Although draft FS App. Q does not list groundwater as a pathway, the SCSR appears more up to date in this case.</p>
Freightliner-Truck Plant (Daimler)	2366	1.2.3.4	Not listed.	The groundwater pathway is low priority; recontamination potential is low. Source control measures include vapor control and removal (2010), effectiveness pending. SCD anticipated 2015. (Table 4.5.3-3)	31	Groundwater pathway is not listed.	59	<p>The SCSR (p. 31) lists Freightliner Truck Plant (Daimler) (ESCI #2366) as having low potential for sediment recontamination from groundwater. This site should be included in FS Section 1. Although draft FS App. Q does not list groundwater as a pathway, the SCSR appears more up to date in this case.</p>

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End of Swan Island Lagoon	3901	1.2.3.4	Not listed.	The groundwater pathway is low priority; recontamination potential is low. The groundwater pathway is anticipated to be excluded, pending further investigation. SCD anticipated 2015. (Table 4.5.3-3)	31	Site not listed.	NA	The SCSR (p. 31) lists End of Swan Island Lagoon (ECSI #3901) as having low potential for sediment recontamination from groundwater. This site should be included in FS Section 1. The groundwater pathway has not yet been excluded from SCMs by DEQ. Although draft FS App. Q does not list this site, the SCSR appears more up to date in this case.
Freightliner-Parts Manufacturing Plant (Daimler)	115	1.2.3.4	Not listed.	The groundwater pathway is low priority; recontamination potential is low. The groundwater pathway is anticipated to be excluded, pending further investigation. SCD anticipated 2015. (Table 4.5.3-3)	31	Groundwater pathway is not listed.	61	The SCSR (p. 31) lists Freightliner-Parts Manufacturing Plant (Daimler) (ECSI #115) as having low potential for sediment contamination from groundwater. This site should be included in FS Section 1. The groundwater pathway has not yet been excluded from SCMs by DEQ. Although draft FS App. Q does not list groundwater as a pathway, the SCSR appears more up to date in this case.
Evraz Oregon Steel Mill	141	1.2.3.4	Evraz Oregon Steel Mill (ESCI Site ID 141) –Contaminants are manganese and arsenic.	"Groundwater: Based on concentrations of manganese and arsenic detected in shoreline wells in the range of background levels, generally declining concentrations in shoreline monitoring wells when compared to upland wells, and the absence of associated adverse impacts to aquatic species in the river, DEQ determined that no source control measures were needed to control groundwater impacts. Further evaluation of this pathway is planned after completion of the riverbank remedy, but the potential for sediment recontamination due to arsenic and manganese in shoreline groundwater is considered low."	82	The groundwater pathway is low priority. DEQ is considering a no further action decision. The source control determination will likely be available early 2012. Upland and overwater COIs are: TPH and metals.	5	The FS text differs substantially from p. 82 of the SCSR. The overall impression from this FS text is that there is an ongoing discharge of concern to the river, while the SCSR indicates there is likely no substantial impact from groundwater, although there will be some additional evaluation. The FS text should be made consistent with the SCSR.
Time Oil	170	1.2.3.4	Time Oil (ECSI Site ID 170) – Contaminants are pentachlorophenol, arsenic, gasoline- and diesel-range hydrocarbons.	"Groundwater: Contaminants of concern in site groundwater are pentachlorophenol, arsenic and diesel range hydrocarbons. There is a pentachlorophenol plume identified at the site and a pump and treat system is operating to prevent its migration to the river. Additional evaluation to treat the pentachlorophenol source area using in-situ chemical oxidants is ongoing with the goal being to eliminate the need for the groundwater control system."	68	There are three groundwater plumes. Two are low priority, one is medium priority. Next steps include soil removal (completed 2011), quarterly monitoring, and pump and treat. Effectiveness is to be determined. Revised SCE to be completed in 2012. Upland and overwater COIs are: VOCs, SVOCs, PAHs, TPH, metals, PCP, dioxins/furans.	8	The FS text fails to note the status of source controls and that the potential for sediment recontamination from this site groundwater is considered “low” (SCSR, p. 66). The FS text should be made consistent with the SCSR.
Premier Edible Oil	2013	1.2.3.4	Premier Edible Oil (ECSI Site ID 2013) – Contaminants are TPH (diesel-range hydrocarbons), manganese, and arsenic.	"Groundwater: The primary area of concern for groundwater has been in the southwest corner of the site, where historic releases of petroleum fuels to groundwater occurred. Areas of non-aqueous phase liquids in the subsurface present an ongoing source of dissolved petroleum constituents and have also mobilized metals in groundwater by creating reducing conditions in the subsurface. DEQ anticipates final approval of a barrier wall and any other needed measures in the fall of 2014 to address these ongoing sources to the river. Until installation of the barrier wall is complete and effective control is demonstrated, the groundwater pathway is considered uncontrolled. However, the potential for sediment recontamination due to these constituents in groundwater is considered low."	69	Priority is listed as high for groundwater in the southwest corner of the site. SCD planning is in progress. Upland and overwater COIs are: VOCs, SVOCs, PAHs, TPH, PCBs, metals, phthalates.	11	The source control measures and status noted in the SCSR are not included in the FS text. The FS text also fails to note that the potential for sediment recontamination from the groundwater is considered “low” (SCSR, p. 69). The FS text should be made consistent with the SCSR.

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Schnitzer Steel Industries	2355	1.2.3.4	Schnitzer Steel Industries (ECSI Site ID 2355) – A halogenated VOC plume is known to be discharging to the river. Contaminants include cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), and trichloroethene (TCE).	"Groundwater: Evaluation of the VOC plume identified on Figures 4.3 and 4.5.7 indicates that concentrations do not significantly impact to the Willamette River. DEQ is currently evaluating additional groundwater monitoring results and anticipates excluding the groundwater pathway from the site and the potential for sediment recontamination due to groundwater is considered low."	71	The groundwater pathway is medium priority. The SCD is TBD. Upland and overwater COIs are: VOCs, TPH, and metals.	10	This FS text says the plume is discharging to the river, while the SCSR says that concentrations do not significantly impact the river. The FS text also fails to note that the potential for sediment recontamination due to groundwater is considered low, and that DEQ anticipates excluding the groundwater pathway from the site. The FS text should be made consistent with the SCSR.
Terminal 4 Slip 3	272	1.2.3.4	Terminal 4 Slip 3 (ECSI Site ID 272) – Contaminants include TPH (diesel-range hydrocarbons).	"Groundwater: Light non aqueous phase liquids resulting from the diesel pipeline release has been removed from upland wells since 2003. LNAPL recovery rates have diminished, but LNAPL recovery and groundwater monitoring will continue, including sentinel wells in the amended riverbank soil. Therefore, the groundwater remedy appears to be successful, and the sediment recontamination potential due to groundwater at the site is low."	72	The groundwater pathway is medium priority. The SCD includes bank excavation and backfill remedial action, NAPL recovery, and monitoring. Upland and overwater COIs are: PAHs, and TPH.	18	The FS text does not note the status of source controls, which appear to be successful, or that the potential for sediment recontamination is low, per the SCSR. The FS text should be made consistent with the SCSR. Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: where the SCSR says, "2003", this is incorrect and the SCSR should be revised to 1993.
Tarr Oil	1139	1.2.3.4	Tarr Oil (ECSI Site ID 1139) – A halogenated VOC plume is not known to be releasing to the river. Contaminants include cis-1,2-DCE, PCE, TCE, and vinyl chloride.	"Groundwater - A total of sixteen groundwater monitoring wells were installed. The dissolved-phase groundwater plume extends from the Tarr facility to the west-southwest, with approximate dimensions of 600 to 800 feet wide and 2,000 feet long. Access to private property could not be attained for well placement to define the end of the plume adjacent to the Willamette River. However, given the concentrations of PCE and TCE at the furthest down gradient well and the estimated travel distance of 450 feet to the transition zone, the PCE concentration is expected to exceed fish consumption water quality criteria and Portland Harbor screening level value at the interface with the river but present a low sediment recontamination potential. Source control measures are required to protect Willamette River receptors and DEQ anticipates issuing an order for implementation of a final remedy in 2015, in accordance with the remedial investigation and feasibility study process schedule. Once implemented, monitoring will be required to demonstrate effectiveness, and source control will be considered complete."	22	Groundwater pathway is not listed.	86	The FS text regarding the plume <u>not</u> reaching the river appears to be incorrect. The SCSR states that the plume is expected to reach the interface with the river but that the potential for sediment recontamination from groundwater is low. The FS text should be made consistent with the SCSR. Also, the SCSR identifies this site as "Tarr, Inc." and the FS text should be made consistent to avoid confusion. Although the draft FS App. Q does not list groundwater as a pathway, the SCSR appears more up to date in this case.

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Kinder Morgan Linnton Bulk Terminal	1096	1.2.3.4	Kinder Morgan Linnton Bulk Terminal (ECSI Site ID 1096) – A TPH plume is located onsite and has released to the river. Contaminants include light non-aqueous phase liquids (LNAPL), diesel-range hydrocarbons, residual-range hydrocarbons, and gasoline-range hydrocarbons.	"Groundwater: A plume of LNAPL, petroleum hydrocarbons and associated dissolved constituents was identified in the southern and riverward portion of the site. Historically, petroleum sheens were intermittently observed in the river at this shoreline area and were managed with floating absorbent containment booms. In 2004, Kinder Morgan installed a series of groundwater/LNAPL recovery wells along the bulkhead support wall between the tank farm and the southern shoreline area. The recovery system operated and was upgraded over the years and in 2012, Kinder Morgan installed a barrier wall and a new set of recovery wells to contain and continue removing LNAPL. The wall is approximately 220 feet long by 30 to 33 feet deep and the system also provides some groundwater containment and treatment around the wall. Adaptive management and effectiveness monitoring are anticipated to demonstrate that the highest priority portion of the groundwater pathway is controlled and whether additional controls are necessary for the remaining portions of site groundwater. The potential for sediment recontamination due to the petroleum constituents in groundwater at the site is considered low."	77	The groundwater pathway is high priority. Interim SCM includes LNAPL removal and containment with a groundwater pump and treat system. Upland and overwater COIs are: VOCs, PAHs, TPH, metals.	16	The SCSR indicates that the groundwater plume was “identified in the southern and riverward portion of the site”, which differs somewhat from the FS text. Also, the SCSR indicates the status of ongoing source controls and that the potential for sediment recontamination due to groundwater is considered low, which should be reflected in the FS text.
BP Arco Bulk Terminal	1528	1.2.3.4	BP Arco Bulk Terminal (ECSI Site ID 1528) – A TPH plume has discharged to the river. Contaminants include TPH (gasoline-range and diesel-range hydrocarbons) and LNAPL, and the plume extends under the adjacent downstream property.	"Groundwater: Groundwater pump and treat landward of the concrete seawall started in the 1970’s. Significant expansion of the hydraulic containment system occurred in 2005. Based on groundwater performance monitoring and a numeric groundwater model, DEQ determined that the wall and hydraulic containment system provides adequate containment of liquid phase hydrocarbons and dissolved phase constituents, except for a relatively small amount of flow and dissolved phase constituents around the north end of the wall. While control is not yet complete, additional hydraulic containment to address this issue is planned to be operational in early 2015. The potential for sediment recontamination due to this groundwater pathway is considered low."	78	The groundwater pathway is high priority. SCD includes interceptor wells installed in 1971, 1994 and 1997; an enhanced hydraulic control system (2005); new sheetpile seawall (2007); effectiveness monitoring (2009). Upland and overwater COIs are: VOCs, PAHs, TPH, metals.	21	The SCSR (p. 78) indicates the status of source controls on the site and that the potential for sediment recontamination from this plume is considered low. This information should be included in the FS text.
Exxon Mobil Bulk Terminal	137 (1989)	1.2.3.4	Exxon Mobil Bulk Terminal (ECSI Site ID 137) – A TPH plume has discharged to the river. Contaminants include gasoline- and diesel-range hydrocarbons.	"Groundwater: A subsurface barrier wall was installed along part of the northern portion in the 1980s, terminating in the vicinity of the northern dock infrastructure about 3,600 feet short of the northern property boundary. Routine groundwater monitoring activities have been performed at the site since the 1990s. In the northern portion, ExxonMobil began operating an air sparging and soil vapor extraction system in 2000 to address dissolved TPH and a dual-phase extraction system between February 9, 2011 and March 2013. Shore Terminals converted the dual-phase extraction system to a groundwater extraction system in 2013. Recent groundwater monitoring indicates that concentrations have dropped to acceptable levels and DEQ anticipates issuing a source control decision in 2015. Sediment recontamination potential from this groundwater pathway is low."	79	The groundwater pathway is high priority. Existing air sparge/vapor extraction system (2006) did not sufficiently control migration of dissolved petroleum constituents. SCD includes a dual-phase pump and treat system, installation scheduled 2010. Upland and overwater COIs are: VOCs, PAHs, TPH, metals.	24	This appears to refer to the site identified in the SCSR as “Shore Terminals (includes former NuStar #1989 and ExxonMobil #137).” The naming and numbering in the FS text should be consistent with the SCSR to avoid confusion. The SCSR (p.79) indicates the status of source controls, that the concentrations have dropped to acceptable levels, and that the potential for sediment recontamination from this plume is considered low. This information should be included in the FS text.

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Foss Maritime/ Brix Marine	2364	1.2.3.4	Foss Maritime/Brix Marine (ECSI Site ID 2364) – TPH releases from underground storage tanks (USTs) have been identified onsite. Contaminants include gasoline- and diesel-range hydrocarbons.	"Groundwater: TPH and PAHs from underground storage tank releases have been identified in groundwater at the site. DEQ’s preliminary evaluation of groundwater analytical results indicates no significant impact to the Willamette River. DEQ anticipates excluding the groundwater pathway and considers the potential for sediment recontamination by groundwater from the site to be low."	79	The groundwater pathway is medium priority. SCD includes continued monitoring; complete available site data for RI and source control evaluation. Upland and overwater COIs are: VOCs, PAHs, TPH, metals.	23	The SCSR indicates there are no significant impacts to the Willamette River, which differs from the FS text which indicate a plume has discharged to the river. Also, the SCSR indicates DEQ anticipates excluding the groundwater pathway for this site and considers the potential for sediment recontamination by groundwater from the site to be low. All of this SCSR information should be included in the FS text.
Missing Site: US Moorings	1641	1.2.3.4	Missing Site at RM 6	<p>"EPA led the remedial investigation and feasibility study for this site...Review of the remedial investigation and feasibility study documents indicate that evaluation of erodible soils and banks, groundwater, stormwater and in-water sediment was undertaken at the site and that the remedy selected included a vegetated buffer along part of the bank, groundwater and erodible soils monitoring, and continued implementation of the 1200Z Industrial Stormwater General permit. Documentation of remedy implementation was not available to DEQ at the time of this report.</p> <p>The available information on the site investigation indicates that...the potential for groundwater infiltration to the preferential pathways of underground utility lines traversing the site was not evaluated...Due to lack of adequate characterization of all potential discharges from the site and data that indicates existing sources with on-going discharge of contaminants of concern for the adjacent sediment management area, DEQ recommends EPA consider the site to have a high potential for recontamination, until these pathways are adequately evaluated and addressed."</p>	54	The groundwater pathway priority is TBD. SCE findings are TBD (FS anticipated in 2010). Upland and overwater COIs are: VOCs, SVOCs, PAHs, PCBs, pesticides, metals, other (e.g. cyanide).	23	<p>The SCSR indicates the site has a high potential for recontamination, until the pathways (e.g. groundwater and stormwater) are adequately evaluated and addressed. This information should be included in the FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.6-3 (p.52) should be revised. Recontamination potential is reported as, "High until in-water remedy implemented at Gasco", this should be revised simply to, "High" given that the in-water remedy at Gasco will have no impact on sources from US Mooring.</p>

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NW Natural/Gasco	84	1.2.3.4	NW Natural/Gasco (ECSI Site ID 84) – Groundwater contamination associated with historical MGP waste is known to be discharging to the river. Contaminants detected in groundwater include PAHs, SVOCs, VOCs (e.g., BTEX), cyanide, sulfide, sulfate and carbon disulfide, ammonia, and metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc). Gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbons and total petroleum hydrocarbon fractions are being added to the groundwater monitoring program.	<p>"Groundwater: To prevent the continued migration of contaminated groundwater to the river, DEQ required control and treatment of groundwater in the alluvium and fill water bearing zones. With input from EPA and the partners, DEQ approved planning and design of groundwater source control measures for the alluvium water-bearing zone in 2011. Construction of the groundwater extraction wells for the Alluvium water bearing zone were completed along the shoreline of the Gasco Site and the northern portion of the adjoining Siltronic property in 2013. The water treatment system was also constructed in 2013, which discharges treated groundwater to the Willamette River under an NPDES permit. The first phase of testing of the alluvium extraction and treatment system began in November 2013 and is nearing completion. The second phase of tested involves full-time full-scale operation and is anticipated to begin in late 2014 or early 2015. This portion of groundwater is considered controlled, pending effectiveness demonstration, with a low potential for sediment recontamination.</p> <p>Planning for construction of a groundwater cutoff and collection trench is planned to address contamination in the fill water bearing zone. A plan and schedule is under development, but until measures are in place and demonstrated to be effective, this portion of groundwater at the site is considered uncontrolled. Due to the nature of the contaminants, discharge flow path and proximity to the river, sediment recontamination potential is considered high."</p>	55	The groundwater pathway is high priority. Groundwater source control is warranted along the shoreline. DNAPL control is needed along the southern portion of Segment 1 on the Gasco site. Final Source Control Design submitted 2012. Upland and overwater COIs are: VOCs, SVOCs, PAHs, TPH, metals, other (e.g. cyanide).	29	<p>The SCSR (p. 55) indicates that the alluvial plume is considered controlled pending effectiveness demonstration and that there is now a low potential for sediment recontamination from this portion of the groundwater. The SCSR also states that the fill control measures are being planned. This information should all be included in the FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.6-3 (p.52) reports that the sediment recontamination potential is, "High until in-water & fill portion upland remedies implemented", the SCSR should be revised to, "High until fill portion upland remedies implemented", given that the in-water remedies will have no impact on upland source controls.</p>

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Siltronic	183	1.2.3.4	Siltronic (ECSI Site ID 183) – A chlorinated VOC plume as well as groundwater plumes associated with historical MGP waste and pesticide plumes from Rhone Poulenc are known to discharge to the river. Contaminants include petroleum-related and chlorinated VOCs (benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,1-dichloroethene, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride), PAHs, gasoline-range, diesel-range, and residual-range hydrocarbons, cyanide, metals (arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, silver, thallium, vanadium, and zinc), 2,4,5-trichlorophenoxyacetic acid (2,4,5-TP), and 2-(2,4-Dichlorophenoxy)propionic acid (2,4-DP-p).	"Groundwater: DEQ, with input from EPA and the partners, approved an enhanced in-situ bioremediation program in 2008, which Siltronic implemented in the vicinity of the former tank system solvent release area. This interim measure consists of two steps: injection of a slurry of controlled release carbon and zero-valent iron, known as EHCTM, into the subsurface; followed by injection of a commercial culture of dehalobacteria, called KB-1TM. Initial source area treatment occurred in July 2009 and was expanded with a second treatment in June 2011. Performance monitoring of the effectiveness of the source area treatment is ongoing. The groundwater control and treatment system for the alluvium water bearing zone for the Gasco site extends onto the northern portion of the Siltronic site and intends to control and contain the groundwater impacted by manufactured gas plant residuals and solvent releases. Groundwater impacts south of the groundwater collection systems are low and the need for additional groundwater source control measures will be evaluated during review of the Siltronic site remedial investigation, which is expected to be completed in 2015. DEQ considers the alluvium and south portions of groundwater controlled, pending effectiveness demonstration, and that the potential for sediment recontamination is low. However, contamination in the fill water bearing zone at Gasco also extends onto the Siltronic property. A plan and schedule is under development for a groundwater cutoff and collection trench, but until measures are in place and demonstrated to be effective, this portion of groundwater at the site is considered uncontrolled. Due to the nature of the contaminants, discharge flow path and proximity to the river, sediment recontamination potential is considered high."	56	The groundwater pathway is high priority. SCE is ongoing. Source Control Evaluation for Segment 3 submitted to DEQ February 2009. Supplemental shallow groundwater data being collected during MGP RI. RI submitted 1st Qtr. 2011. Upland and overwater COIs are: VOCs, SVOCs, PAHs, TPH, metals, other (e.g. cyanide).	41	SCSR (p. 55) indicates MGP and CVOCs in the alluvial plume are considered controlled and fill plume control planning is underway. It also indicates that groundwater impacts south of the groundwater collection systems are low, the need for additional groundwater source control measures will be evaluated in this area, that DEQ considers the alluvium and south portions of groundwater controlled, pending effectiveness demonstration, and that the potential for sediment recontamination is low for this area. This information should be included in the FS text. Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.6-3 (p.53) should be revised. Source control measures for Fill groundwater are reported as, "Fill portion - Uncontrolled", this should be revised to, "Fill portion - SCMs needed - integrate with in-water". Also, SCSR text, "Initial source area treatment occurred in July 2009 and was expanded with a second treatment in June 2011" should be revised to "Initial source area treatment occurred in July 2009 and was expanded with a second treatment in June 2011 resulting in over 90% of the contaminant mass being destroyed." (page 56).

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Rhone Poulenc	155	1.2.3.4	<p>Rhone Poulenc (ECSI Site ID 155) – Known releases of organochlorine insecticides and herbicides, including pentachlorophenol (PCP), 2,4-DP, Bromoxynil, 4(2,4-dichloropenoxy)butyric acid (2,4-DB), 2-methyl-4-chlorophenoxyacetic (MCPA), methylchlorophenoxypropionic acid (MCPB), 4-(4-chloro-2-methylphenoxy)butanoic acid (MCPB), 2,4,5-trichlorophenoxyacetic acid [2,4,5-T], 2,4-dichlorophenoxyacetic acid (2,4-D), DDT, Endrin, Heptachlor, sodium chlorate, sodium arsenate, 2,4,5-TP, aldrin, dieldrin, chlordanes, and 2,4-DP-p have occurred at the site. Contaminants migrating in groundwater include VOCs, and herbicides. Contaminants infiltrating City Outfall 22B include: SVOCs (2,4,6-trichlorophenol, 2,4-dichlorophenol, 2-methylphenol, pentachlorophenol, and naphthalene), insecticides (aldrin, alpha-chlordane, dieldrin, gamma-chlordane, heptachlor epoxide, hexachlorobenzene, DDD, DDE, and DDT), dioxin/furans (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD]) and metals (aluminum, boron, molybdenum, thallium, arsenic, barium, iron, manganese) (ODEQ 2013).</p>	<p>"Groundwater: Contaminants in groundwater associated with the site exceed several screening level values at riverbank monitoring wells and transition zone water sample locations. While ranked as a medium priority, DEQ is not requiring an interim control because the contaminants of concern have low organic carbon-water partitioning coefficients, which lowers the likelihood of sediment recontamination. DEQ is requiring the plume to be addressed in the upland feasibility study. Beginning in 2006, Rhone-Poulenc worked to seal and line portions of the City of Portland’s outfall basin 22B stormwater lines to prevent infiltration and facilitated transport of contaminated groundwater to the Willamette River. Effectiveness monitoring is scheduled to start as soon as lining quality assurance issues are resolved. A comprehensive plan to control groundwater discharge to the Willamette River will be evaluated in the site feasibility study, which is expected to be complete in 2015. Because a plan and schedule for groundwater source control is not available at the time of this report, the groundwater pathway is considered uncontrolled. As evidenced by the similarity of contaminants in groundwater to those in river sediment adjacent to the plume’s interface with the river, the potential for sediment recontamination from groundwater is medium." (page 58)</p>	58	<p>Groundwater pathway is high priority. SCE submitted 2010. SCD is TBD. Upland and overwater COIs: VOCs, SVOCs, TPH, pesticides, metals, phthalates, dioxin/furans.</p>	42	<p>The SCSR indicates that groundwater is medium priority, that the potential for sediment recontamination from groundwater is medium, and that DEQ is requiring the plume to be addressed in the upland feasibility study. Also, the SCSR indicates that Rhone-Poulenc worked to seal and line portions of the City of Portland’s outfall basin 22B stormwater lines which prevented transport of contaminated groundwater to the Willamette River. All this information should be included in the FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: The SCSR groundwater text states, "A comprehensive plan to control groundwater discharge to the Willamette River will be evaluated in the site feasibility study...", the SCSR should be revised to, "A comprehensive plan to control groundwater discharge to the Willamette River, including groundwater that crosses beneath the Arkema property, will be evaluated in the site feasibility study..."</p> <p>The text should be revised to refer to contaminants "detected in groundwater" instead of "migrating in groundwater" and PCBs should be added to the list of contaminants detected in groundwater. Text referring to contaminants infiltrating into City Outfall 22B should be clarified to reflect Outfall 22B stormwater lines have been lined to prevent transport of contaminated groundwater to the Willamette River and that performance monitoring is underway.</p>
Kinder Morgan Pump Station	2104	1.2.3.4	<p>Kinder Morgan Pump Station (ECSI Site ID 2104) – A TPH plume has been identified at the pump station.</p>	<p>The groundwater pathway is low priority; recontamination potential is low. SCMs include soil vapor extraction (2004-2014). Effectiveness pending. SCD anticipated 2015.</p>	53-54	<p>This site was not tracked in Milestone Report. The DEQ 1999 Strategy Recommendation ranked this site as a low priority for a preliminary assessment; such sites were generally not investigated further according to Portland Harbor site discovery site prioritization.</p>	46	<p>This site is described as “Sante Fe Pacific Pipelines (Kinder Morgan)” in the SCSR (pp.53-54). The FS text should be made consistent with the SCSR to avoid confusion. Appendix Q of the draft FS information is now outdated, and the SCSR should be used for the revised FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR (pp. 53-54) indicates that groundwater priority is low and a soil vapor extraction system has been implemented from 2004 to 2014 with effectiveness of the system to be determined.</p>

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Arkema	398	1.2.3.4	Arkema (ECSI Site ID 398) – Contaminants detected in groundwater at the site include, but are not limited to, DDT and its metabolites DDD and DDE (DDx) and VOCs (chlorobenzene, chloroform, PCE, TCE and benzene), perchlorate and hexavalent chromium.	"Groundwater: DEQ, with input from EPA and the partners, approved the selected partial remedy in 2009. Construction of a 1,700 lineal foot soil-bentonite slurry groundwater cutoff wall was completed in October 2012, the configuration of which is shown on Figure 4.5.6. The wall is up to 88 feet deep and in contact with basalt bedrock. Construction of a system to collect and treat groundwater landward of the cutoff wall was completed in 2013. Startup testing of the groundwater collection and treatment system began in 2014. Groundwater migrating to the Willamette River outside of the groundwater barrier wall containment system remains as a medium priority for source control. Remedial alternatives to address these groundwater plumes will be evaluated in either the Arkema or Rhone Poulenc upland feasibility studies, which are expected to be completed in 2015. Because a plan and schedule for the remainder of groundwater source control is not available at the time of this report, a portion of the groundwater pathway is considered uncontrolled. As evidenced by the similarity of contaminants in groundwater to those in river sediment adjacent to the plume's interface with the river, the potential for sediment recontamination from groundwater is medium."	56-57	The groundwater pathway is high priority. Interim SCMs include AS/SVE system, initiated in situ chemox treatment, calcium polysulfide, and in situ bio. Groundwater containment system is in design, scheduled to be operational in 2013. Upland and overwater COIs: VOCs, pesticides, metals, furans, misc. compounds.	41	<p>The SCSR (p. 57) notes that a groundwater cutoff wall and treatment system have been implemented and that potential for groundwater recontamination of sediment at this site is considered “medium.” The FS text should be revised to include this information. Also, the portion of the FS text indicating "include, but are not limited to” should be deleted for consistency. This wording does not appear in any other FS site source description. Also, "chlorobenzene" should be replaced with "monochlorobenzene", which is more accurate.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.6-3 should be revised. The priority for the groundwater pathway is listed as "High", it should be revised to, "Medium" to conform to text on p. 57.</p>
CertainTeed Roofing (GS Roofing, Former Bird) (Missing Site)	117	1.2.3.4	Missing Site at RM 8	"Groundwater: Groundwater characterization indicates low level exceedances of JSCS screening levels in groundwater in the industrial fill area. A scope-of-work for additional characterization and evaluation is in development. Because characterization is incomplete, a final determination as to the need for groundwater source control or a plan and schedule for control cannot be completed. Therefore, the groundwater pathway at this site is considered uncontrolled and the potential for sediment recontamination is considered low."	59-60	The groundwater pathway priority is TBD. The WP is in progress (2010). Waiting on SCE to be completed. Upland and overwater COIs: VOCs, SVOCs, TPH, metals.	43	<p>CertainTeed Roofing Products/GS Roofing (ECSI #117) on p. 59 of the SCSR is not listed in the FS text. The FS text should note, per the SCSR, that groundwater contamination is under investigation and the groundwater pathway at this site is considered “uncontrolled” at this time.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: the SCSR text should be revised. The SCSR text states, "Contaminants associated with the production of roofing and site fill include oil, nickel, copper, zinc and lead." Oil should be deleted; TPH and PAHs should be added.</p>

Site Name	ID No.	Section Number	FS Section 1 Text Being Commented On	Text summary	Page	Text summary	PDF Page	Section 1 Text or Member Comment to DEQ Regarding Accuracy of SCSR
Kinder Morgan Willbridge Bulk Terminal	160	1.2.3.4	Kinder Morgan Willbridge Bulk Terminal (ECSI Site ID 160) – A TPH plume is not known to be currently discharging to the river. Contaminants include gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbons, and arsenic.	"Groundwater: DEQ has been tracking the groundwater pathway as a medium priority because of the low level screening level value exceedances of PAHs and metals in monitoring wells near the river. During 2009, Kinder Morgan patched portions of the Saltzman Creek concrete flume where groundwater was entering the flume. This effort has successfully controlled this preferential migration of impacted groundwater to the Willamette. There are no current groundwater source control measures operating other than routine monitoring and maintenance of interim spill response actions. DEQ considers this pathway controlled, pending effectiveness demonstration and the potential for sediment recontamination by groundwater from the site is considered low."	60	Listed as 1549, Willbridge Bulk Fuel Facilities. The groundwater pathway is high priority. Various SCMs have been implemented. SCD is not complete. Interim product recovery and hydraulic containment for shallow GW (sheet pile wall). Effectiveness monitoring is ongoing.	53	<p>The SCSR (p. 60) indicates that DEQ considers the pathway controlled, pending effectiveness demonstration and that the potential for sediment recontamination by groundwater from the site is low. This information should be included in the FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.6-3 (p.53) should be revised. Source control measures for groundwater are reported as, "Saltzman Cr. Flume repairs 2007/2009 - effectiveness pending ", this should be revised to, "Saltzman Cr. Flume repairs 2007, 2008, 2009, 2014 - effectiveness pending". Further, the SCSR groundwater text should be revised (p. 60). The text states, "During 2009, Kinder Morgan patched portions of the Saltzman Creek concrete flume where groundwater was entering the flume", this should be revised to, "Kinder Morgan repaired portions of the Saltzman Creek concrete flume where groundwater was entering the flume in 2007, 2008, 2009, and 2014."</p>
Chevron and Unocal Willbridge Bulk Terminal	25 and 177	1.2.3.4	Chevron and Unocal Willbridge Bulk Terminal (ECSI Site IDs 25 & 177) – A TPH plume located onsite has discharged to the river. Contaminants include LNAPL, gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbons, and metals (arsenic and manganese).	The Chevron USA Terminal (ECSI # 25): "Groundwater: Two sheet pile walls and associated groundwater extraction wells to control the migration of LNAPL are in place and being operated since 2001 and 2007. One is located on the Chevron Terminal and the other is located on the Phillips Terminal, as shown on Figure 4.5.6. Chevron and Phillips jointly conducted an investigation and re-lined the 60-inch City of Portland outfall basin 22 stormwater pipe to prevent contaminated groundwater from entering the line and being transported to the river. Additional re-lining of pipe sections is under consideration. The groundwater source control evaluation is currently in review and a groundwater source control decision for the medium priority dissolved plume outside of the LNAPL area is expected in 2015. Some additional defining characterization is being completed on the site, but DEQ generally considers the pathway controlled, pending effectiveness demonstration, and the potential for sediment recontamination is low."	61	Chevron (Willbridge Terminals) (ESCI# 25) not listed. Willbridge Bulk Fuel Facility (ESCI# 1549): The groundwater pathway is high priority. SCM selection is ongoing. SCMs have been implemented prior to finalization of SCE. SCD is not complete; interim product recovery and hydraulic containment for shallow GW (sheet pile wall). Effectiveness monitoring is ongoing. Upland and overwater COIs: VOCs, PAHs, TPH, metals.	53	<p>The SCSR indicates for ECSI 25 that source control measures are implemented, the groundwater pathway is considered controlled pending effectiveness demonstration, and that the potential for sediment recontamination is low. This information should be included in the FS text.</p> <p>These are described as two separate sites in the SCSR, making it difficult to attribute the FS text to one site or the other as being accurate or not. The FS text should present the sites separately consistent with the SCSR to avoid confusion.</p>

Site Name	ID No.	Section Number	FS Section 1 Text Being Commented On	Text summary	Page	Text summary	PDF Page	Section 1 Text or Member Comment to DEQ Regarding Accuracy of SCSR
Chevron and Unocal Willbridge Bulk Terminal	25 and 177	1.2.3.4	Chevron and Unocal Willbridge Bulk Terminal (ECSI Site IDs 25 & 177) – A TPH plume located onsite has discharged to the river. Contaminants include LNAPL, gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbons, and metals (arsenic and manganese).	The Phillips 66 Terminal (Conoco Phillips) (ECSI # 177): "Groundwater: A sheet pile wall and associated groundwater extraction wells to control the migration of LNAPL is in place on the Phillips facility (Figure 4.5.6). Phillips jointly conducted an investigation with Chevron and re-lined the 60-inch City of Portland outfall basin 22 stormwater pipe, and Chevron also re-lined sections of pipe on the Phillips site, to prevent groundwater from entering the lines and being transported to the river. The groundwater source control evaluation is currently in review and a source control decision for the medium priority dissolved plume outside of the LNAPL areas is expected in 2015. DEQ generally considers the pathway controlled, pending effectiveness demonstration, and the potential for sediment recontamination is low." (page 62)	62	Site reported as Conoco - Willbridge (ESCI# 177) Groundwater pathway not included. Stormwater pathway refers reader to "See Willbridge "1549": Willbridge Bulk Fuel Facility (ESCI# 1549): The groundwater pathway is high priority. SCM selection is ongoing. SCMs have been implemented prior to finalization of SCE. SCD is not complete; interim product recovery and hydraulic containment for shallow GW (sheet pile wall). Effectiveness monitoring is ongoing. Upland and overwater COIs: VOCs, PAHs, TPH, metals.	53	The SCSR indicates for ECSI 177 that source control measures are implemented, the groundwater pathway is considered controlled pending effectiveness demonstration, and that the potential for sediment recontamination is low. This information should be included in the FS text. These are described as two separate sites in the SCSR, making it difficult to attribute the FS text to one site or the other as being accurate or not. The FS text should present the sites separately consistent with the SCSR to avoid confusion.
Chevron Asphalt Plant	1281	1.2.3.4	Chevron Asphalt Plant (ECSI Site ID 1281) – Free product consisting of relatively immobile asphalt-related petroleum has been noted on site. Contaminants include TPH (diesel-range and gasoline-range hydrocarbons), arsenic, BTEX and naphthalene.	The groundwater pathway is low priority; recontamination potential is low. The groundwater pathway has been excluded. SCD 2010. (Table 4.5.4-3)	36	The groundwater infiltration/city storm sewer pathway is low priority. DEQ concludes that this site is not a significant ongoing source of contaminants to the Willamette River, and that source control measures implemented at the site will prevent potential future significant impacts. Another SCD is not anticipated. Upland and overwater COIs: VOCs, PAHs, TPH, metals.	54	The SCSR (p.36) “excludes” the groundwater pathway for this site, which means DEQ did not judge that groundwater is impacting the river sufficiently for any action to be taken. Consequently, this site should not be listed in the FS text, given other SCSR “excluded” sites are not listed in the FS text.
Gunderson	1155	1.2.3.4	Gunderson (ECSI Site ID 1155) –There is a chlorinated VOC plume (1,1-DCE, 1,1,1-trichloroethane [1,1,1-TCA], PCE, TCE and vinyl chloride) near the downstream end of the Gunderson property. In addition, there is a PAH groundwater plume located between the Equilon (Shell Terminal) pipeline gasoline release and the Equilon dock at Gunderson.	"Groundwater: The primary area of concern for groundwater was in the downstream third of the site, where a release of 1,1,1-trichloroethane to groundwater occurred. Active remediation began in 2007, using air sparging and soil vapor extraction at the source and a pump and treat system located downgradient of the release, landward of the riverbank. Based on an optimization evaluation and subsequent sampling, DEQ approved the shutdown of that combined remediation system in May 2014. Following additional groundwater sampling to verify that concentrations were remediated to below applicable screening levels, DEQ anticipates issuing a source control decision at the end of 2014. Given the behavior of 1,1,1-trichloroethane, sediment recontamination is unlikely to occur, even if concentrations remain above screening level values and the plume reaches the river. Therefore, recontamination potential due to groundwater at the site is low." (pages 41-42)	42	Three groundwater areas are noted for the site. The groundwater pathway is medium priority in all three areas. SCE findings indicate there is a VOC plume migrating to the river. The plume has been substantially reduced. Need to re-evaluate the need for further remediation. SCD includes hydraulic containment and source removal using air-sparging/soil vapor extraction (AS/SVE). Quarterly performance monitoring and reporting in ongoing. Effectiveness evaluation is TBD. Upland and overwater COIs: VOCs, PAHs, TPH, metals.	70	The SCSR notes that the recontamination potential due to groundwater at the site is low, source controls have been implemented, and that DEQ anticipates issuing a source control decision at the end of 2014. This information should be included in the FS text. Also, the FS text about a "PAH groundwater plume" appears to be a reference to ECSI 2117 and 169. It is not clear why this is discussed as part of the Gunderson site, and should be moved to those other site descriptions. No PAH plume is known to be reaching the river from the Texaco/Shell/Equilon pipe leak beneath Gunderson. The FS text should be revised accordingly. Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: SCSR Table 4.5.4-3 (p. 38) should be revised. The groundwater pathway was listed as "medium" priority, this should be revised to, "low". The recontamination potential is reported as,"High until remedy implemented", this should be revised to, "High until bank remedy implemented".

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Christensen Oil	2426	1.2.3.4	Christensen Oil (ECSI Site ID 2426) – A TPH (Stoddard solvent) plume is located onsite.	"Groundwater: Dual phase extraction activities concluded in 2014 leaving free product and dissolved concentrations of Stoddard solvent greatly reduced, though above screening level values. The groundwater does not contact site stormwater piping in the vicinity of the residual dissolved plume, eliminating the potential for it to be preferentially transported to the river via stormwater pipes. DEQ anticipates issuing a source control decision by the end of 2014, but the ½ mile distance of the site from the river eliminates the potential for recontamination via groundwater."	40	Groundwater pathway is not listed.	71	It is unclear why this site is listed and it should be removed from the FS text. The SCSR indicates the distance of the site from the river eliminates the potential for sediment recontamination via groundwater.
Univar	330	1.2.3.4	Univar (ECSI Site ID 330) – A VOC plume is located onsite. Contaminants include 1,1-dichloroethane (DCA), 1,1-DCE, cis-1,2-DCE, methylene chloride, PCE, toluene, 1,1,1-TCA, TCE, vinyl chloride, and xylenes.	"Groundwater: The record of decision specified expansion of the existing soil vapor extraction system and expansion of the groundwater extraction and treatment system in the source area. The remediation system was subsequently expanded to include a LNAPL pilot test recovery system and DNAPL monitoring. Concurrent with the operation and management of the remediation system, an updated conceptual site model is in development which will support a reevaluation of source area remedial technologies and corrective action alternatives."	41	The groundwater infiltration/city storm sewer pathway priority is TBD. SCE and SCM selection are TBD.	72	This site name in the SCSR is Vanwater and Rogers (Univar). The FS text should be revised to the same name to avoid confusion. The SCSR text contains information on source control status and priority of the plume. This information should be included in the FS text.
Galvanizers Inc.	1196	1.2.3.4	Galvanizers Inc. (ECSI Site ID 1196) – A zinc plume is located at this site.	"Groundwater: To address metals in groundwater, contaminated soils were removed in 2001 from an area where an infiltration pit was formerly located. While elevated concentrations of zinc were found in groundwater under the site, zinc concentrations decline with distance from the site and the plume does not appear to reach the river or infiltrate into underground pipes that discharge to the river. Therefore, the groundwater pathway is excluded."	44	The groundwater infiltration/city storm sewer pathway priority is TBD. SCE and SCM selection are TBD.	75	The SCSR (p.44) calls this company “Galvanizers Company.” The SCSR states that the groundwater pathway is excluded. Therefore, this site should not be listed in the FS text, consistent with other excluded sites that are not listed.
Missing site: Pacific States Galvanizing	1024	1.2.3.4	Missing Site at RM 10	The groundwater pathway is low priority; recontamination potential is low. SCMs include removal of tanks (1996), and soil (1998-2002). NFA 1992, 2012 (off-site plume not delineated (Table 4.5.2-3, page 25). The site is not currently in the program, groundwater is anticipated to be excluded. (Table 4.8.1-2, page 90)	25, 90	Groundwater pathway is not listed.	89	The SCSR notes that groundwater is anticipated to be excluded, but it has not been excluded at this time. Consequently, this site should be included in the FS text for completeness. Per the SCSR, the FS text should include that there is a low potential for recontamination, the priority is low, and that the groundwater pathway is anticipated to be excluded by DEQ. Although draft FS App. Q does not list groundwater as a pathway, the SCSR appears more up to date in this case.

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Sulzer Pump	1235	1.2.3.4	Sulzer Pump (ECSI Site ID 1235) – TPH, PAH, and VOC plumes from UST and waste oil UST releases exist at this site.	"Groundwater: Groundwater monitoring at two locations during the removal of underground storage tanks and a heating oil tank showed chlorinated VOCs and PAHs, respectively, in groundwater. These contaminants appeared localized and attenuated substantially before reaching the river. Push-probe groundwater sampling was conducted along the river bank in 2003 and showed PAHs at concentrations near and marginally above JSCS criteria in most samples. While the low level PAHs may reflect soil contamination as opposed to dissolved groundwater concentrations, the groundwater pathway from the site is considered uncontrolled until additional data demonstrates that it can be excluded or source control measures are implemented and demonstrated effective. Potential for sediment recontamination by groundwater is considered low."	26	The groundwater pathway is low priority. SCE is TBD and SCD is pending. Upland and overwater COIs: VOCs, PAHs, TPH, metals, phthalates.	83	The SCSR notes that the contaminants appear to be localized and attenuated, the potential for sediment recontamination is low, and the pathway is anticipated to be excluded in 2015. This information should be included in the FS text.
Centennial Mills	5136	1.2.3.4	Centennial Mills (ECSI Site ID 5136) – A TPH (diesel-range hydrocarbons) plume is located at this site. The plume is not known to discharge to the river, but may be infiltrating the Tanner Creek sewer line near the river.	"Groundwater: TPH, PAHs, and metals have been detected in site groundwater monitoring wells at low concentrations. These contaminants appear to be associated with contaminated fill placed on-site during site development and minor site-related releases. Detected concentrations are below screening level values and DEQ Ambient Water Quality Criteria and are also generally considered to be of low mobility. Based on this information, site groundwater is considered insignificant and excluded as a source control pathway. Sampling of backfill around the abandoned storm lines that cross under the site did not identify significant contamination. However, the potential for contamination in the sewer pipe bedding to reach the river will be addressed by a separate investigation and remediation of the adjacent site, known as the Tanner Creek project, anticipated to be complete in 2015. Until this work is completed, the preferentially transport of groundwater pathway is considered uncontrolled. However, due to the moderate concentrations, length of travel and dilution of the creek, the recontamination potential from preferentially transported groundwater is low."	27-28	Site is not listed.	NA	The SCSR (p. 27-28 as quoted to the right) indicates that site groundwater is excluded as a source control pathway. The SCSR also indicates that the potential for contamination in the sewer pipe bedding to reach the river will be addressed by a separate investigation, and although the recontamination potential from preferentially transported groundwater is low, until remediation takes place, the preferential transport of groundwater pathway is considered uncontrolled. This information should be included in the FS text. Although draft FS App. Q does not list this site, the SCSR appears more up to date in this case.
Riverbank Sites								
NA	NA	1.2.3.5	Identification of contaminated banks is being managed by DEQ under an MOU with EPA. The following provides a discussion of the known contaminated banks. Additional information on these sites is available in DEQ's ECSI database.	"4.4 Erodible Banks Riverbanks at sites were evaluated following the JSCS to determine if they present a potential for contaminant transport to the Willamette River by erosion of bank soils or mass wasting. Bank areas of concern are depicted on geographic regions Figures 4.5.1 through 4.5.9, presented in Section 4.5 of this report. Per agreement with EPA, except for the few sites discussed in the geographic region sections, DEQ deferred the selection of riverbank source control measures, design, permitting and implementation to EPA. This allows for efficient integration of the riverbank source control measure design, permitting and construction with the in-water sediment remedial work."	18	NA	NA	This text appears to be in conflict with p. 18 of the SCSR. It is unclear from these two documents who is actually managing which riverbanks under which program. This needs to be clarified and made consistent across the two documents.

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NA	NA	1.2.3.5	All riverbank text	NA	NA	NA	NA	In general, two overall inconsistencies (similar to groundwater text) exist between the SCSR and the FS text for riverbank soils. First, the FS text does not mention completed source controls or their status as described in the SCSR on any of the sites. This leaves the reader with the impression that all these sources remain uncontrolled, which is mostly not the case. Second, the text fails to use the SCSR priorities and categories of concern (i.e., low, medium, high), which leaves the reader with the impression that all the sites' riverbanks have an equal potential to impact the river, which is not the case. The FS text on all sites should be revised to include information from the SCSR on source controls, source control status, and categories of concern.
Evraz Oregon Steel Mill	141	1.2.3.5	Evraz Oregon Steel Mill (ECSI Site ID 141) – Contaminants present in the riverbank includes PCBs and metals (arsenic, cadmium, chromium, copper, lead, manganese, and zinc).	"Bank Erosion: DEQ selected a shoreline source control action for the site that includes: removal of soil hot spots to the extent feasible; disposal of excavated soil at a permitted facility; and stabilization with geotextile, sand, large and small rock, and vegetation along approximately 1,700 feet of shoreline. The placement of materials is intended to contain any residual low-level contamination and prevent erosion. DEQ anticipates this action will be implemented beginning in the spring of 2015 and effectiveness will be demonstrated through a long-term monitoring plan to ensure the shoreline remains stable and adequately vegetated. Until the bank action implemented and demonstrated to be effective, the pathway is considered uncontrolled and with a high potential for sediment recontamination."	p.82	"A source control evaluation completed in May 2006 determined that source control measures for PCBs and metals in riverbank soil are warranted. Source control measures involve targeted removal and bank stabilization. Source control is needed to protect adjacent surface sediment following remediation. Evraz Oregon Steel is working with DEQ on the design and permitting of a remedial action."	2-30	The SCSR notes that shoreline source controls have been designed and will be implemented in 2015 and the riverbank has a high potential for sediment recontamination until controls are implemented. This information should be included in the FS text.
Schnitzer Steel Industries	2355	1.2.3.5	Schnitzer Steel Industries (ECSI Site ID 2355) – Results of soils samples collected under the docks along the south shore of the International Slip indicate that contaminants are PCBs and dioxins.	"Riverbank Erosion: The riverbank along the Willamette River is heavily armored by rip rap to prevent erosion and DEQ, therefore, excluded the pathway. As indicated on Figure 5.4.7, the banks along the innermost end of the industrial slip and the south dock area along the slip have the potential for erosion of soil containing contaminants. Both of these bank areas will be integrated with EPA's in-water remedy and DEQ anticipates removal or containment of contaminated upland soils adjacent to the head of the slip. Until the completion of the final bank actions, the potential for sediment recontamination remains high."	70	"A source control evaluation was ongoing for bank erosion as of the fourth quarter 2010. Site COIs include PAHs, total petroleum hydrocarbons (TPH), PCBs, metals, and pesticides. Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-30	The SCSR notes the status of source control and that the potential for sediment recontamination is considered high until the completion of final bank actions as part of EPA's in-water remedy. This information should be included in the FS text.
MarCom South	2350	1.2.3.5	MarCom South (ECSI Site ID 2350) – Further investigation of the nature and extent of contamination in the bank was conducted in 2012. Contaminants are PAHs and metals (arsenic, cadmium, chromium, copper, zinc).	Table 4.5.5-3 of the SCSR (p. 46) indicates that the site is excluded for bank erosion.	46	"The site has been divided into operable units. DEQ is awaiting response from Mar Com South site property owner on bank investigation. Site COIs including VOCs, semivolatile organic compounds (SVOCs), PAHs, TPH, PCBs, and metals. Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-32	The SCSR indicates this site is excluded for bank erosion. This site should not be listed in the FS text on riverbanks sources. Also, the LWG received information from the City indicating that: There were additional bank soils data collected in 2012 that had PCB concentrations over 200 ppb. Because these were below 13.3 ft NAVD88, DEQ did not include these data in their bank erosion evaluation. These data are also not in the FS. How does EPA intend to address this gap?

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Willamette Cove	2363	1.2.3.5	Willamette Cove (ECSI Site ID 2363) - Riverbank contaminants are PCBs, dioxins/furans, metals (lead, mercury, nickel, and copper), and PAHs.	"Bank Erosion: The Willamette Cove riverbank is subject to erosion in beach areas, oversteepened areas, and where revetment materials are failing. Riverbank soil samples have been collected above and below the mean high water line and indicate that metals, dioxin/furan, petroleum and PCBs are present in certain areas and will require remediation. Oversteepened bank areas will be laid-back during forthcoming uplands remediation work to minimize future erosion potential and additional bank remediation will be integrated into the in-water remedy, completing source control for this pathway."	48-49	"A source control evaluation is ongoing for the bank erosion pathway. Source control evaluation sampling was completed in September 2010. Site COIs include PAHs, PCBs, and metals. Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-32	<p>The SCSR indicates the status of source controls for the banks (p. 49) and that the potential for recontamination is "medium" until SCMs are applied (p. 48). This information should be included in the FS text.</p> <p>The ECSI Site ID No. for Willamette Cove is reported as 2066 in the SCSR. The ESCI Site ID should be revised in the FS text.</p>
Swan Island Shipyard	271	1.2.3.5	Swan Island Shipyard (ECSI Site ID 271) – Recent sampling results for OU1 indicate that contaminants include metals (arsenic, cadmium, chromium, copper, lead, mercury, and zinc), PAHs, PCBs, and tributyltin. Contaminants in riverbank soils in OU5 include metals (arsenic, copper, lead, and zinc), PAHs, and PCBs.	Table 4.5.3-3 indicates that source control measures are planned and that the potential for recontamination is medium until SCMs are implemented.	31	A source control evaluation is ongoing for the bank erosion pathway. Source control evaluation sampling was completed in the first quarter of 2012 (OU1 and OU3). Bank erosion COIs include PCBs, and butyltins.	Table 17b, page 1	<p>The SCSR indicates the status of source controls for the banks and that the potential for recontamination is "medium" until SCMs are implemented. This information should be included in the FS text.</p>
Missing site: Premier Edible Oils	2013	1.2.3.5	Missing Site at RM 3	"Riverbank Erosion: Localized areas of contaminated soil are present in the shoreline, which require source control measures. DEQ anticipates that sampling will be completed in fall of 2014 to confirm the nature, extent and location of contaminants in the erodible shoreline and near-shore area for focused removal and stabilization actions in 2015. Until completion of the final bank remedy, the pathway is considered uncontrolled and sediment recontamination potential from bank erosion is considered medium."	69	"As of October 2010, DEQ was to respond to the source control evaluation for bank erosion at this site. Site COIs include metals, volatile organic compounds (VOCs), PAHs, TPH, and pesticides."	2-30	<p>This FS text does not mention the Premier Edible Oils Site (ECSI #2013). This site should be added to the FS text. The SCSR notes that the pathway is uncontrolled and states that there is a medium potential for sediment recontamination from bank erosion. This information should be included in the FS text.</p>
Kinder Morgan Linnton Bulk Terminal	1096	1.2.3.5	Kinder Morgan Linnton Bulk Terminal (ECSI Site ID 1096) – Contaminants are petroleum constituents (BTEXs and PAHs) and metals (arsenic and lead).	"Bank Erosion: The bank line at the site consists of a wooden bulkhead wall about 10-12 feet above the rip rap lined beach. These structures prevent bank erosion, with the exception of the exposed beach at the water line. A small area of subsurface petroleum contamination was identified on the beach in an area where petroleum sheen has previously been observed. DEQ is evaluating the results of a leaching potential evaluation and pore-water sampling of beach contamination, which is being considered by EPA for integration into the in-water remedy. Controls for bank erosion are not needed, so this upland pathway is anticipated to be excluded."	77	"A source control evaluation was ongoing for riverbank erosion as of the fourth quarter of 2010. Site COIs include metals, PAHs, and pesticides. Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-31	<p>The SCSR notes that controls for bank erosion are not needed and the upland pathway is anticipated to be excluded. Therefore, this site should not be listed in the FS text.</p>

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Missing sites: US Moorings	1641	1.2.3.5	Missing Site at RM 6	"Review of the remedial investigation and feasibility study documents indicate that evaluation of erodible soils and banks, groundwater, stormwater and in-water sediment was undertaken at the site and that the remedy selected included a vegetated buffer along part of the bank, groundwater and erodible soils monitoring, and continued implementation of the 1200Z Industrial Stormwater General permit. Documentation of remedy implementation was not available to DEQ at the time of this report...Due to lack of adequate characterization of all potential discharges from the site and data that indicates existing sources with on-going discharge of contaminants of concern for the adjacent sediment management area, DEQ recommends EPA consider the site to have a high potential for recontamination, until these pathways are adequately evaluated and addressed."	54	A source control evaluation was complete in winter 2010 for the bank erosion pathway. FS anticipated in summer 2010.	Table 9a, page 1	The US Moorings site is not listed in the FS text. The SCSR notes that DEQ recommends EPA consider the site to have a high potential for recontamination (including the bank pathway) until potential discharges are adequately characterized. This site and the information on insufficient source characterization and recontamination status should be included in the FS text.
NW Natural/Gasco	84	1.2.3.5	NW Natural/Gasco (ECSI Site ID 84) – Contamination associated with historical MGP waste are known to be located in the riverbank. Contaminants include PAHs, gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbons, cyanide, and metals (zinc).	Riverbank Erosion: The potential for contaminated bank material to enter the river currently exists at the site. By agreement with EPA, measures to address riverbank contamination and erosion concerns will be integrated into the remedial design for the sediment remedy, completing upland source control for this pathway. As evidenced by the similarity of contaminants in the bank with those in the adjacent river sediment, until the bank remedy is implemented, this pathway should be considered to have high potential for sediment recontamination.		"Source control measures for bank erosion for Segments 1 and 2 will be designed and implemented as part of in-water sediment remediation under EPA authority....The Segment 3 source control evaluation includes characterization of contamination along the Siltronic shoreline. Available data from source control evaluation findings for Segment 3 indicate exceedances of JSCS values in shoreline soils for several contaminants."	2-30, 2-31	The status of the source control measures noted in the SCSR should be included in the FS text.
Siltronic	183	1.2.3.5	Siltronic (ECSI Site ID 183) – Contamination associated with historical MGP waste is known to be present in the northern portion of the Siltronic riverbank. Riverbank contaminants include PAHs, gasoline-range hydrocarbons, diesel-range hydrocarbons, residual-range hydrocarbon and cyanide and metals (zinc).	"Riverbank Erosion: The Siltronic riverbank is heavily armored with basalt, such that the potential for contaminated bank material to enter the river is low. By agreement with EPA, if measures to address riverbank contamination and erosion are necessary, they will be integrated into the remedial design for the sediment remedy, completing upland source control for this pathway. Bank contaminants are similar to those in adjacent river sediment, but erosion potential is currently low and sediment recontamination potential pending an integrated sediment remedy is also low."	56	"Source control evaluation is ongoing for Segment 3 (see AOPC 9U description above). Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-32	The SCSR indicates the status of source controls, that the potential for bank erosion to the river is low, and the potential for recontamination is low. This information should be included in the FS text.

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Burlington Northern and Santa Fe Railroad Bridge (the Railroad Bridge is not a "Site")	155 and/or 398	1.2.3.5	BNSF Railroad Bridge – Contamination associated with pesticide and herbicide releases from Rhone Poulenc and Arkema are known to be present in the riverbank below and adjacent to the BNSF railroad bridge. Riverbank contaminants include dioxin/furans, metals (aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc, insecticides (DDD, DDE, DDT, aldrin, alpha-hexachlorocyclohexane [alpha-BHC], alpha-chlordane, beta-BHC, cis-nonachlor, delta-BHC, dieldrin, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, endrin ketone, gamma-BHC, gamma-chlordane heptachlor, heptachlor epoxide, hexachlorobutadiene, methoxychlor, mirex, oxychlordane, and trans-nonachlor), PCBs, SVOCs (acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, benzyl alcohol, bis (2-ethylhexyl)phthalate, butylbenzylphthalate, chrysene, bibenzo(a,h)anthracene, dimethylphthalate, di-n-butylphthalate, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene). (AMEC 2011).	Rhone Poulenc (ECSI# 155): "Riverbank Erosion: Site waste discharges to the former Doane Lake flowed through an historical drainage ditch and onto the riverbank at an area close to the City of Portland Outfall 22B and immediately adjacent to the northern edge of Arkema riverbank (see Figure 4.5.6). Soil samples collected showed significant exceedances of the JSCS screening level values for SVOCs, VOCs, dioxin/furans, chlorinated pesticides and herbicides, PCBs and metals in the ditch and for chlorinated pesticides and herbicides, PCBs and molybdenum below the ditch discharge point. Therefore, riverbank soil below the historical drainage ditch outlet represents a high potential for recontamination and should be considered by EPA in the design of the in-water remedy for the adjacent sediment management area."	18, 58	Bank erosion pathway is not listed.	NA	<p>The “Site Name” should be revised to "West-side Riverbank near the Burlington Northern and Santa Fe Railroad Bridge". While the “Burlington Northern and Santa Fe Railroad Bridge” is used in the FS as a geographic landmark, it is not otherwise relevant as it is not a “Site” and has never had an ECSI listing.</p> <p>Although draft FS App. Q does not list this site, the SCSR appears more up to date in this case.</p>
Arkema	398	1.2.3.5	Arkema (ECSI Site ID 398) –Riverbank contaminants include DDT, dioxin/furans, PCBs, and metals (chromium and lead).	"Riverbank Erosion: DEQ is evaluating riverbank remediation and source control measures as an element of the upland feasibility study. EPA, for a portion of the riverbank, is also evaluating source control measures as a component of the in water early action project. Once measures to address riverbank contamination erosion concerns are agreed on, they will be integrated into the remedial design for the sediment remedy, completing upland source control for this pathway. Due to the potential for erosion and the similarity of bank contaminants to those in adjacent river sediment, until the bank remedy is implemented, sediment recontamination potential should be considered high."	56-57	"A source control evaluation determined that source control measures for metals and pesticides in riverbank soil are warranted. A draft Riverbank Remedial Alternatives Summary was submitted in October 2009 to DEQ, with comments received April 2010. A review of riverbank remedial alternatives is to be coordinated with EPA."	2-32	
Missing site: Hampton Lumber (part of Front Ave LLP)	5761	1.2.3.5	Missing Site at RM 7	"Bank Erosion: low priority; confirm during in-water remedy design if SCM needed"	37	Bank erosion pathway is not listed.	NA	<p>The SCSR notes that Hampton Lumber (#5761) is a potential bank contamination site with low priority and medium potential for recontamination, and that confirmation is needed during in-water remedy design to determine if SCM is necessary. This site and information should be included in the FS text. Although draft FS App. Q does not list this site, the SCSR appears more up to date in this case.</p>
Missing site: Glacier Northwest (Part of Front Ave. LLP)	2378	1.2.3.5	Missing Site at RM 7	"Bank Erosion: low priority; confirm during in-water remedy design if SCM needed"	37	Bank erosion pathway is not listed.	NA	<p>The SCSR states that SCMs may be needed at Glacier NW, which will be confirmed during in-water remedy. This site and information should be included in the FS text. Although draft FS App. Q does not list this site, the SCSR appears more up to date in this case.</p>

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Missing site: Kinder Morgan (Willbridge Terminals)	160	1.2.3.5	Missing Site at RM 7	"Riverbank Erosion and Overland flow: Characterization of potentially erodible portions of the riverbank did not identify source control concerns, so this pathway was excluded. However, components of the pesticide DDT were detected in a small isolated beach area under the dock, which requires removal. Kinder Morgan is preparing a plan to complete the removal in 2015 with DEQ oversight. Although DDT is also found in the adjacent river sediments, due to the small area targeted for removal, sediment recontamination potential is considered medium until removal is completed."	53, 60	"A source control evaluation was ongoing for riverbank erosion as of the fourth quarter of 2010. Site COIs include metals, PAHs, and pesticides. Until results of the source control evaluation are known, it is assumed by DEQ that this bank may be a current source."	2-31	<p>The FS text does not mention Kinder Morgan Willbridge Terminal (ECSI #160) for bank sources. The SCSR notes the pathway is excluded, however; sediment recontamination is considered medium until DDT-contaminated beach soils are removed from a small, isolated beach area under the dock. This information should be included in the FS text.</p> <p>Also, some LWG members submitted comments to DEQ on January 16, 2015 indicating that: the SCSR riverbank erosion text should be revised. The following sentence, "Kinder Morgan is preparing a plan to complete the removal in 2015 with DEQ oversight", should be deleted from the SCSR.</p>
Missing site: Certain Teed Roofing (GS Roofing, Former Bird)	117	1.2.3.5	Missing Site at RM 7	"Bank Erosion: medium priority; confirm during in-water remedy design if SCM needed"	53, 59	A work plan was in progress in October 2010.	Table 14, page 3	The FS text does not mention Certain Teed Roofing Productions (ECSI #117). The SCSR notes the status of source controls and that the potential for recontamination. This site and information should be included in the FS text.
Gunderson	1155	1.2.3.5	Gunderson (ECSI Site ID 1155) –Contaminants include metals (lead, nickel, and zinc), and PCBs.	"Riverbank Erosion: DEQ determined that contaminant levels in riverbank soils require source control measures, which will be evaluated as an element of the upland feasibility study. Interim bank stabilization measures were implemented from the upstream end of the site downstream to the approximate location of City of Portland outfall 18, as depicted in figure 4.5.4, but additional or more permanent measures may be necessary. Until measures are implemented and demonstrated effective, sediment recontamination potential from bank erosion from this portion of the site is considered high. For the bank area upstream of City outfall 18, final measures will be determined in the forthcoming feasibility study and implemented in conjunction with the EPA in-water remedy, completing source control for this pathway."	41	"Source control evaluations are ongoing for bank erosion at areas 1, 2, and 3. Site COIs include VOCs, PAHs, PCBs, and metals. Final source control measures were submitted in August 2011 and are being negotiated between Gunderson and DEQ. Portions of the bank, primarily in Area 3, will need to be remediated to achieve source control."	2-34	The SCSR lists source control contaminants of concern, including dioxins/furans, PAHs, PCBs, butyltins, metals and 1,1,1 trichloroethane. The FS text should be verified against the most recent contaminant information available from DEQ. The SCSR notes the status of source controls that the potential for sediment recontamination is considered high until SCMs are implemented. This information should be included in the FS text.